Amendment under 37 C.F.R. § 1.111 **Attorney Docket No. Q65387**
U.S. Application No. 09/902,781

IN THE CLAIMS:

1. (Original) A method for the carrier recovery in Orthogonal Frequency Division Multiplexing systems, the method comprising the steps of:

at transmission side, receiving a signal to be retransmitted and performing an inverse discrete Fourier transform providing a number of pilot subcarriers to be transmitted together with subcarriers associated with the symbols of a certain constellation, each symbol being associated with a block comprising a number of bits;

at reception side, performing a discrete Fourier transform of the received signal,

wherein the method further comprises the steps of:

arranging said pilot subcarriers in a contiguous/flanked manner inside the signal to be retransmitted ($\{x_{i,n}\}$);

by band-pass filtering the received signal for extracting the flanked pilot subcarriers, thus obtaining a first filtered signal; and

performing a feed-forward correction of phase error by utilizing such extracted pilot subcarriers, said feed-forward correction step being carried out before performing said discrete Fourier transform.

2. (Original) A method according to claim 1, wherein it further comprises the step of subjecting the first filtered signal to a complex conjugate operation, thus obtaining a second signal.

3. (Original) A method according to claim 2, wherein it further comprises the steps of:

providing a local replica of pilot symbols; and

multiplying said second signal by the local replica of the pilot symbols, thus obtaining a third signal.

4. (Original) A method according to claim 3, wherein it further comprises the step of extracting phase information of the third signal through unit vector computation means, for obtaining a fourth signal.

5. (Original) A method according to claim 4, wherein it further comprises the step of subsampling the extracted phase and performing a piecewise linear interpolation of the phase information for obtaining a fourth signal.

6. (Previously presented) A method according to claim 4, wherein it further comprises the step of multiplying the fourth signal by the signal received at reception side ($\{\tilde{x}_{i,n}\}$).

7. (Original) A method according to claim 1, wherein it further comprises the additional step of shifting, at every OFDM symbol, a spectrum portion which is available for said pilot subcarriers.

8. (Original) A method according to claim 1, wherein said received signal to be retransmitted is a radio signal in high-frequency point-to-point radio links.

9. (Original) A device for carrier recovery in Orthogonal Frequency Division Multiplexing systems comprising:

means for receiving a signal to be retransmitted, said received signal comprising pilot subcarriers and subcarriers associated with the symbols of a certain constellation, each symbol being associated with a block comprising a number of bits; and

means for performing a discrete Fourier transform,

wherein said pilot subcarriers are arranged in a contiguous/flanked manner inside the signal to be retransmitted and in that said device further comprises:

means for extracting the flanked pilot subcarriers by band pass filtering the received signal, obtaining a first filtered signal; and

means for performing, by utilizing such extracted pilot subcarriers, a feed-forward correction of phase error to be carried out before performing said discrete Fourier transform.

10. (Original) A device according to claim 9, wherein it further comprises means for subjecting the first filtered signal to a complex conjugate operation, thus obtaining a second signal.

11. (Original) A device according to claim 10, wherein it further comprises means for providing a local replica of pilot symbols and means for multiplying said second signal by the local replica of the pilot symbols, thus obtaining a third signal.

12. (Original) A device according to claim 11, wherein it further comprises means for extracting phase information of the third signal through unit vector computation means, for obtaining a fourth signal.

13. (Original) A device according to claim 12, wherein it further comprises means for subsampling the extracted phase and performing a piecewise linear interpolation of the phase information, for obtaining a fourth signal.

14. (Previously presented) A device according to claim 12, wherein it further comprises means for multiplying the fourth signal by the received signal to be retransmitted.

15. (Original) A device according to claim 9, characterized in that said signal to be retransmitted is a radio signal in high-frequency point-to-point radio links.